

ABSTRACT OF THE DISCLOSURE

A silicon carbon nitride film is formed on an interlayer dielectric film having Si-H bonds and a Cu interconnection. The silicon carbon nitride film has the role of blocking moisture absorption and prevents deterioration associated with the moisture absorption by a lower-layer insulating film and a Cu film, thereby suppressing an increase in the capacitance between interconnections or via resistance. The effect is great especially when the nitrogen concentration of the silicon carbon nitride film is not less than 10 atm % but less than 35 atm %. Between the interlayer dielectric film having Si-H bonds and the Cu interconnection is interposed a laminated film of a Ta film and a TaN film as a barrier metal film in such a manner that the TaN film becomes on the side of the interlayer dielectric film. Because the TaN film prevents the occlusion of the H in the interlayer dielectric film into the Ta film, the deterioration of the Ta film is suppressed and peeling is suppressed in steps such as CMP.